



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,535	02/23/2004	Allen Cheah Chong Leng	080889-5045-US	1525
48591	7590	09/25/2006		EXAMINER
MORGAN, LEWIS & BOCKJUS LLP 1111 PENNSYLVANIA AVENUE WASHINGTON, DC 20004				OWENS, DOUGLAS W
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/785,535	LENG ET AL.
	Examiner	Art Unit
	Douglas W. Owens	2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 June 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-36 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 1-34 is/are allowed.
- 6) Claim(s) 35-36 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 36 is objected to because of the following informalities: in line 3 of the claim "forgers" should be replaced with --fingers--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,538,313 to Smith in view of Patent Application Publication No. 2002/0056894 to Kuo et al.

Regarding claim 35, Smith teaches a semiconductor package comprising:

a die (120);

a wire bonding package substrate (390) positioned under the die, the package substrate having a die attach pad (308) and a plurality of lead fingers (109) surrounding the die attach pad;

a plurality of wire bonds (351, 371) electrically connecting the die to the plurality of lead fingers;

a bottom plate (107) under the die attach pad; and

an insulator (380) set between the die attach pad and the bottom plate such that the die attach pad and the bottom plate are electrically insulated from each other by the insulator.

Smith does not teach a package, wherein the die attach pad has an expansion slot. Kuo et al. teach a package (Fig. 2, for example), wherein the die attach pad has slots (511 – 517) which would have performed the function of “expansion slots”. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the slots taught by Kuo et al. into the package taught by Smith, since it is desirable to restrict the movement of solder when attaching the die (paragraph [0007]; Also see Smith, Col. 3, lines 16 - 22).

Regarding claim 36, Smith teaches a method of assembling a semiconductor package, comprising:

providing a wire bonding package substrate (390) with a die attach pad (308) and a plurality of lead fingers (109) surrounding the die attach pad, the die attach pad having a top surface and a bottom surface;

attaching a die (120) to the top surface of the die attach pad;

setting in place an insulator (380) to the bottom plate;

attaching the bottom plate to the bottom surface of the die attach pad such that the bottom plate and the die attach pad are electrically insulated from each other by the insulator; and

electrically connecting a plurality of wire bonds from the die to the plurality of lead fingers.

Smith does not teach a package, wherein the die attach pad has an expansion slot. Kuo et al. teach a package (Fig. 2, for example), wherein the die attach pad has slots (511 – 517) which would have performed the function of “expansion slots”. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the slots taught by Kuo et al. into the package taught by Smith, since it is desirable to restrict the movement of solder when attaching the die (paragraph [0007]; Also see Smith, Col. 3, lines 16 - 22).

Allowable Subject Matter

4. Claims 1 – 34 are allowed.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W. Owens whose telephone number is 571-272-1662. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Douglas W Owens
Primary Examiner
Art Unit 2811

DWO
September 13, 2006